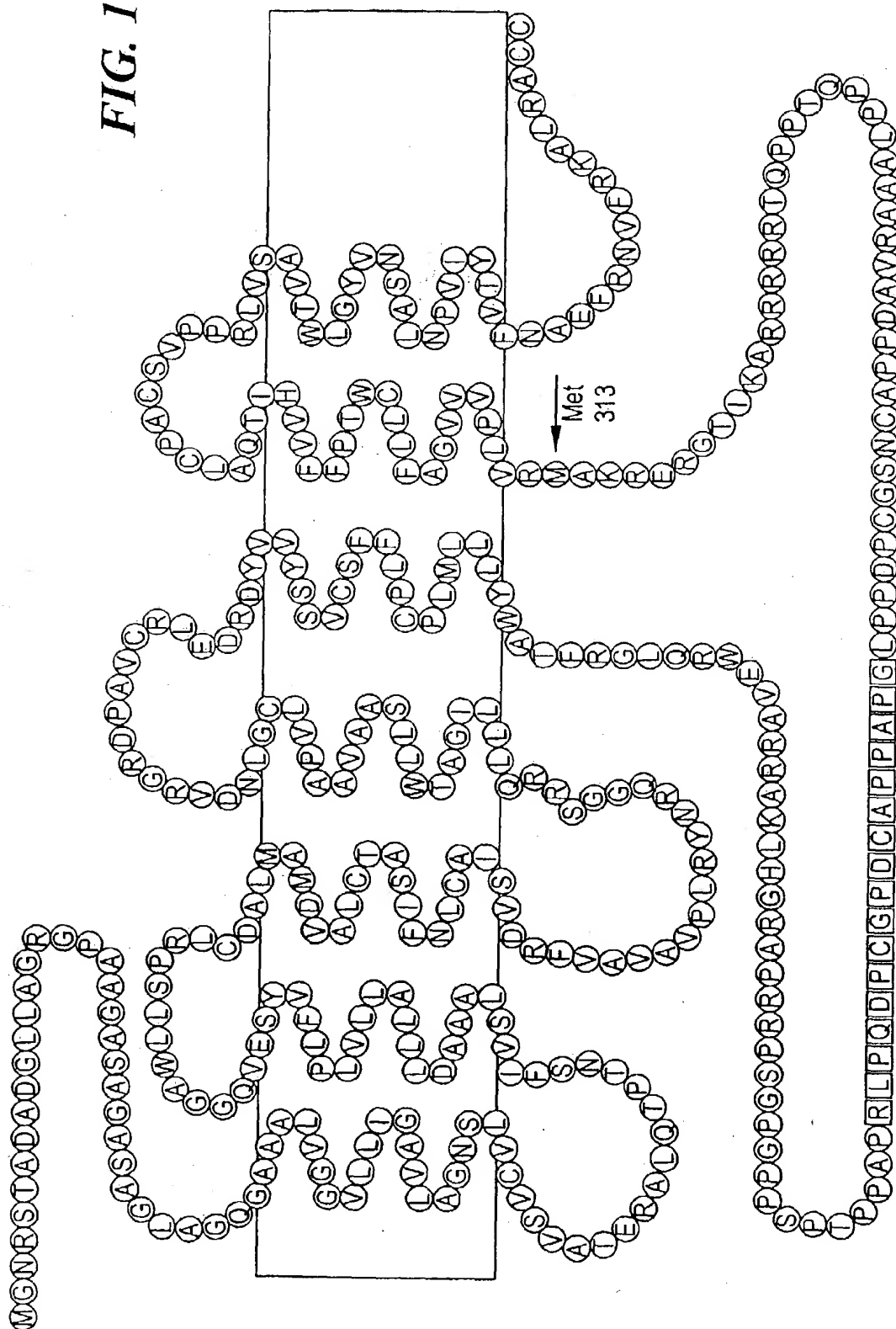


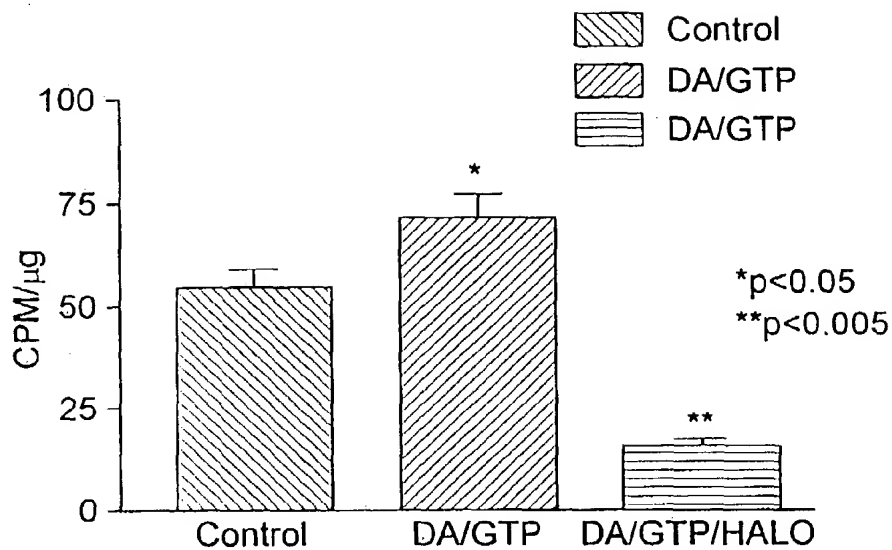
FIG. 1



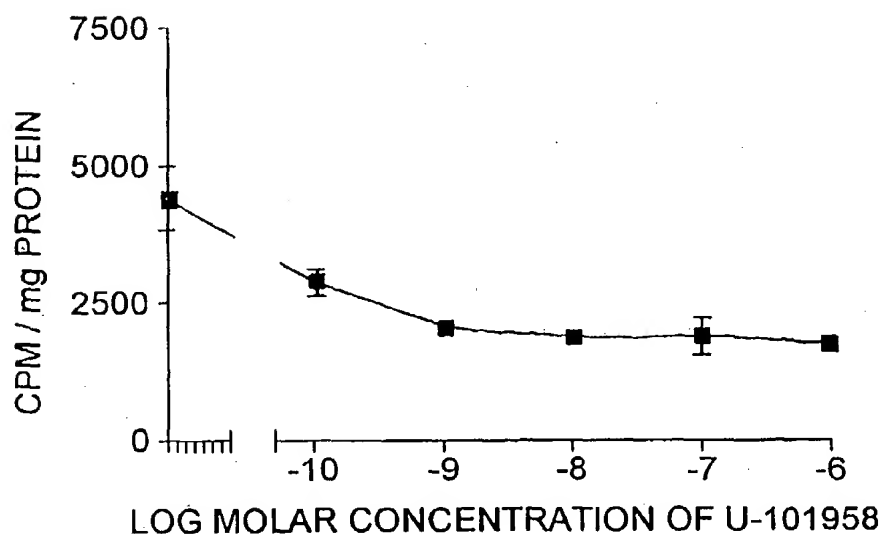
The diagram illustrates the methionine cycle and its regulation. At the top,  $[^{14}\text{C}]$  Formate is converted to Formyl THF, which then leads to 5,10-Methylene THF. This intermediate can enter Purine Synthesis or Thymidine Synthesis. Alternatively, it is converted to 5-Methyl THF by the enzyme SHMT, which also uses Serine and Glycine. 5-Methyl THF can enter DNA synthesis or be converted to DHF by DHFR. The methionine cycle itself starts with  $[^3\text{H}]$  Methionine being converted to MET by MAT. MET is then converted to SAM by MAT. SAM is converted to AdoHcy by AdoHcyase. AdoHcy is converted back to HCY by AdoHcyase. HCY is converted to MET by MAT. SAM is also converted to D<sub>4</sub>SAM by MAT. D<sub>4</sub>SAM is converted to D<sub>4</sub>MET by MAT. D<sub>4</sub>MET is converted to D<sub>4</sub>Hcy by AdoHcyase. D<sub>4</sub>Hcy is converted back to AdoHcy by AdoHcyase. AdoHcy is converted to N-methyl PE by PLMT. N-methyl PE is converted to PE by PLMT. PE is converted to PS by PLMT. PS is converted to PE by PLMT. The diagram also shows the regulation of the cycle by Agonists and Antagonists. Agonists increase the activity of MAT, leading to increased production of D<sub>4</sub>MET and D<sub>4</sub>Hcy. Antagonists decrease the activity of MAT, leading to decreased production of D<sub>4</sub>MET and D<sub>4</sub>Hcy. The diagram also shows the regulation of the cycle by D<sub>4</sub>MET and D<sub>4</sub>Hcy. D<sub>4</sub>MET increases membrane fluidity, while D<sub>4</sub>Hcy decreases membrane fluidity.

**FIG. 2**

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**FIG. 3a**



**FIG. 3b**

